



Standard Guide for Identification of Fiber-Reinforced Polymer-Matrix Composite Materials in Databases¹

This standard is issued under the fixed designation E 1309; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ε) indicates an editorial change since the last revision or reapproval.

1. Scope

1.1 This guide establishes essential and desirable data elements for fiber-reinforced composite materials for two purposes: to establish the material identification component of data-reporting requirements for test reporting and to provide information for the design of material property databases.

1.1.1 This guide is the first part of a two-part modular approach. The first part serves to identify the material and the second part serves to describe testing procedures and variables and to record results.

1.1.2 For mechanical testing, the related document is Guide E 1434. The interaction of this guide with Guide E 1434 is emphasized by the common numbering of data elements. Data Elements A1 through G13 are included in this guide, and numbering of data elements in Guide E 1434 begins with H1 for the next data element block. This guide is most commonly used in combination with a guide for reporting the test procedures and results such as Guide E 1434.

1.2 These guidelines are specific to fiber-reinforced polymer-matrix composite materials. Composite materials, which also contain particulates or precipitated particles, are also included provided they can be described adequately as a filler in the matrix.

1.3 The data elements described in this guide are suggested for use in recording data in a computerized database, which is different from contractual reporting of test results. The latter type of information is described in the material specification or shown in business transactions and is subject to agreement between the vendor and the user.

1.4 This guide defines the information that is considered essential to uniquely describe a composite material. Additional data elements that are considered desirable, but not essential, are also defined. The purpose is to facilitate efficient storage and retrieval of information with a computer and to allow the meaningful comparison of data from different sources.

1.5 This guide with Guide E 1434 may be referenced by the data reporting section of a test method to provide common data

reporting requirements for mechanical tests of high-modulus fiber-reinforced polymer-matrix composite materials. This guide may also be useful for additional tests, for material identification for databases at the property levels or for other uses of material identification of composite materials.

1.6 From this information and a guide such as Guide E 1434, the database designer should be able to construct the data dictionary preparatory to developing a database schema.

1.7 Data elements in this guide are relevant to test data, data as obtained in the test laboratory and historically recorded in laboratory notebooks. Property data, data that have been analyzed and reviewed, require a different level of data elements. Data elements for property data are provided in Annex A1.

2. Referenced Documents

2.1 ASTM Standards:²

- C 274 Terminology of Structural Sandwich Constructions
- D 790 Test Methods for Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials
- D 1600 Terminology for Abbreviated Terms to Plastics
- D 3410/D 3410M Test Method for Compressive Properties of Polymer Matrix Composite Materials with Unsupported Gage Section by Shear Loading
- D 3878 Terminology for Composite Materials
- D 5467 Test Method for Compressive Properties of Unidirectional Polymer Matrix Composites Using a Sandwich Beam
- D 6507 Practice for the Fiber Reinforcement Orientation Codes for Composite Materials
- E 6 Terminology Relating to Methods of Mechanical Testing
- E 1013 Terminology Relating to Computerized Systems
- E 1308 Guide for Identification of Polymers (Excluding Thermoset Elastomers) in Computerized Material Property Databases³
- E 1338 Guide for Identification of Metals and Alloys in

¹ This guide is under the jurisdiction of ASTM Committee D30 on Composite Materials and is the direct responsibility of Subcommittee D30.01 on Editorial and Resource Standards.

Current edition approved Oct. 1, 2005. Published October 2005. Originally approved in 1992. Last previous edition approved in 2000 as E 1309 – 00.

² For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

³ Withdrawn.